



Inspired by **temperature**

**Pressure booster
pump**

Installation Guide

huber



INSTALLATION GUIDE

Pressure booster pump

Pressure booster pump

This installation guide is a translation of the original German installation guide.

VALID IN CONJUNCTION WITH:
HUBER temperature control units

VALID FOR:

Unipump I DC
Unipump II (2-stage)
Unipump III (2-stage)

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Foreword

Dear Customer,

Thank you for choosing accessories from Peter Huber Kältemaschinenbau SE. You have made a good choice. Thank you for your trust.

Please read the installation guide carefully before putting it into operation. Strictly follow all notes and safety instructions.

Follow the installation guide with regard to transport, start-up, operation, maintenance, repair, storage and disposal of the accessory.

We fully warrant the accessory for the specified normal operation.

The component listed on page 5 is referred to in this installation guide as accessory and Peter Huber Kältemaschinenbau SE as Huber company or Huber.

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1 Introduction

1.1 Details on the declaration of conformity



The equipment complies with the basic health and safety requirements of the European Directives listed below:

- Machinery Directive 2006/42/EC
- Low Voltage Directive 2006/95/EC
- EMC Directive 2004/108/EC

1.2 Safety

1.2.1 Symbols used for Safety Instructions

Safety instructions are marked by the below combinations of pictograms and signal words. The signal word describes the classification of the residual risk when disregarding the installation guide.



Denotes an immediate hazardous situation that will result in death or serious injuries.



Denotes a general hazardous situation that may result in death or serious injuries.



Denotes a hazardous situation that can result in injury.

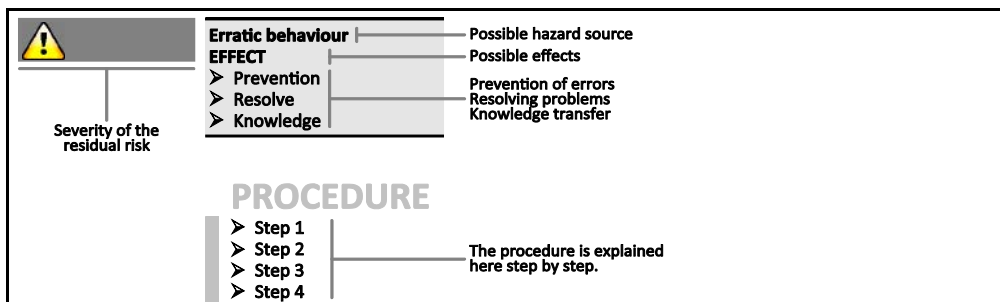


Denotes a situation that can result in property material damage.



Denotes important notes and usable hints.

Safety information and procedure



The safety information in the installation guide is designed to protect the responsible body, operator and the equipment from damage. Safety information must always appear **before** instructions and at the beginning of each chapter. First inform yourself about any residual risks due to misuse before you start an operation.

1.2.2 Safety during commissioning

The following chapters are only relevant for accessories in connection with a HUBER temperature control unit and apply in addition to the operation manual of the temperature control unit used. If you have any questions regarding the installation guide, please contact our Customer Support (see page 27 in section »**Phone number and company address**«). The installation guide is to be kept for future use.

1.2.3 Extension of specified normal operation

The accessory is suitable for compensating pressure losses in external systems when properly installed at the temperature control unit. The accessory itself can **not** be used without being connected to the temperature control unit. Otherwise the intended use as described in the temperature control unit's operation manual applies.

1.3 Responsible bodies and operators – Obligations and requirements

1.3.1 Obligations of the responsible body

Store the installation guide near the accessory where it is easy to access. Only adequately qualified operators (e.g. machine operators, chemists, chemical technical assistants, physicist etc.) may work with the accessory. Operators must be trained before handling the accessory. Verify that the operators have read and understood the installation guide. Define precise responsibilities for the operators. Personal protective equipment must be provided to the operators.

- The responsible body must install a condensation water / thermal fluid drip tray below the temperature control unit (including accessory).
- The operator must check whether national regulations require the mandatory installation of a drain tray for the installation area of the temperature control unit (including accessory) / the entire system.
- Our temperature control unit (including accessory) complies with all applicable safety standards.
- Your system, which uses our temperature control unit (including accessory), must be as safe.
- The responsible body must design the system to ensure it is safe.
- Huber is not responsible for the safety of your system. The responsible body is responsible for the safety of the system.
- Whilst the temperature control unit (including accessory) provided by Huber meets all the applicable safety standards, integration into a system may give rise to hazards that are characteristic of the other system's design and beyond the control of Huber.
- It is the responsibility of the system integrator to ensure that the overall system, into which this temperature control unit (including accessory) is integrated, is safe.
- The **>Mains isolator<** [36] on the temperature control unit (if present) may be provided with a facility to lock the main isolator in the off position to facilitate safe system installation and maintenance of the temperature control unit (including accessory). The accessory must be **additionally** disconnected from the mains connection! It is the responsibility of the responsible body to develop any lock-out/tag-out procedure in accordance with local regulations (e.g. CFR 1910.147 for the US).

1.3.1.1 Proper disposal of resources and consumables

Do comply with all national disposal regulations applicable for you. Contact your local waste management company for any questions concerning disposal.

Overview	Material / Aids	Disposal / Cleaning
	Temperature control unit packaging material	Keep the packaging material for future use (e.g. transport).
	Thermal fluid	Please refer to the safety data sheet of the thermal fluid used for information on its proper disposal. Use the original thermal fluid container when disposing it.
	Filling accessories, e.g. beaker	Clean the filling accessories for reuse. Make sure that the materials and cleaning agents used are properly disposed of.
	Aids such as towels, cleaning cloths	Tools used to take up spilled thermal fluid must be disposed of in the same fashion as the thermal fluid itself. Tools used for cleaning must be disposed of depending on the cleaning agent used.
	Cleaning agents such as stainless steel cleaning agents, sensitive-fabrics detergents	Please refer to the safety data sheet of the cleaning agent used for information on its proper disposal. Use the original containers when disposing of large quantities of cleaning agents.
	Consumables such as air filter mats, temperature control hoses	Please refer to the safety data sheet of the consumables used for information on their proper disposal.

1.3.2 Requirements for operators

Work on the temperature control unit / accessory is reserved for appropriately qualified specialists, who have been assigned and trained by the responsible body to do so. Operators must be at least 18 years old. Persons under the age of 18 years may operate the temperature control unit / accessory only under the supervision of a qualified specialist. The operator is responsible for other people within the unit's working range.

1.3.3 Obligations of the operators

Carefully read the installation guide before handling the temperature control unit / accessory. Always observe the safety instructions. Wear appropriate personal protective equipment (e.g. safety goggles, protective gloves, non-slip shoes) when operating the temperature control unit / accessory.

2 Commissioning

2.1 In-plant transport

CAUTION

Accessories are not transported / moved according to the specifications in this installation guide

INJURIES DUE TO CRUSHING

- Always transport / move accessories according to the specifications in this installation guide.
- Wear personal protective equipment during transport.

NOTE

Accessories are transported in a horizontal position

PROPERTY DAMAGE

- Only transport accessories in an upright position.

- Use an industrial truck for transport.
- Remove the packing material (e.g. the palette) only at the place of installation.
- Protect accessories from transport damage.
- Do not transport the accessory alone and without aids.
- Check the load bearing capacity of the transportation route and the place of installation.

2.1.1 Lifting and transporting the accessory

- Do not lift and transport the accessory alone and without aids.
- Lift and transport the accessory only with an industrial truck.
- The industrial truck must have a lifting force equal to or greater than the weight of the accessory. See the data sheet (from page 28 in Section »Annex«) for the weight of the accessory.

2.2 Unpacking

WARNING

Using damaged accessories

MORTAL DANGER FROM ELECTRIC SHOCK

- Do not operate damaged accessories.
- Please contact Customer Support. The telephone number can be found on page 27, section »Phone number and company address«.

PROCEDURE

- Check for damage to the packaging. Damage can indicate property damage to the accessory.
- Check for any transport damage when unpacking the accessory.
- Always contact your forwarding agent regarding the settlement of claims.
- Follow the instructions on page 12, section »Proper disposal of resources and consumables« for the disposal of packaging material.

2.3 Ambient conditions

CAUTION

**Unsuitable ambient conditions/unsuitable installation
SERIOUS INJURY DUE TO CRUSHING**

- Comply with the requirements under sections »Ambient conditions« and »Installation conditions«.

INFORMATION

Make sure there is adequate fresh air available at the site for the accessory. The warm exhaust air must be able to escape upwards unhindered.

Use of the accessory is permitted only under normal ambient conditions in accordance with DIN EN 61010-1:2011:

- Use only indoors. The illuminance must be at least 300 lx.
- Installation elevation up to 2000 meters above sea level.
- Maintain wall and ceiling clearance for adequate air exchange (dissipation of waste heat, supply of fresh air for the accessory and work area). Ensure adequate floor clearance for air-cooled accessories. Do not operate the accessory from within the box or with an inadequately dimensioned bath as this inhibits the air exchange.
- Ambient temperature values are provided on the technical data sheet; to ensure trouble-free operation, compliance with the ambient conditions is mandatory.
- Relative humidity max 80% to 32 °C and 40 °C decreasing linearly to 50%.
- Short distance to supply connections.
- The accessory must not be installed so as to hinder or prevent access to the disconnecting device (to the power supply).
- Magnitude of the power supply fluctuations: see data sheet from page 28 in section »Annex«.
- Transient surges, as would normally occur in the power supply system
- Installation Class 3
- Applicable degree of soiling: 2.
- Surge category II.

Wall clearance to accessory

Side of accessory	Clearance to the accessory in cm
Top	free standing
Front	min. 10
Right	min. 10
Left	min. 10
Rear	min. 10

2.3.1 EMC-specific notes

- Class A Group 1 equipment according to IEC_EN CiSPR 55011 is intended to be used in “industrial electromagnetic environments”. Their electromagnetic compatibility may be affected if operated in other electromagnetic environments.
- Class B equipment according to IEC_EN CiSPR 55011 is suitable for use in “basic electromagnetic environments”.
- The temperature control unit has the immunity required by EN 61326-1 for the operation in “industrial electromagnetic environments”.
- See the data sheet from page 28 in section »Annex« for the classification of your temperature control unit.
- For more information on electromagnetic compatibility see www.huber-online.com.

2.4 Installation conditions



WARNING

The accessory is put onto the power supply line

DEATH FROM ELECTRICAL SHOCK BY DAMAGE TO THE POWER CABLE.

➤ Do not put the accessory on power cables.

- Allow the accessory to acclimate for about 2 hours when changing from a cold to a warm environment (or vice versa). Do not turn on the accessory beforehand!
- Install upright, stable and without tilt.
- The accessory **must be aligned horizontally**.
- Use a non-combustible, sealed foundation.
- Keep environment clean: Prevent slip and trip hazards.
- Wheels, if present, must be locked after the installation!
- Spilled/leaked thermal fluid must be discarded immediately and correctly. Follow the instructions for the disposal of thermal fluid and material on page 12 in Section »Proper disposal of resources and consumables«.
- Observe the ambient conditions.

2.5 Recommended temperature control hoses



CAUTION

Use of unsuitable/defective hoses and/or hose connections

INJURIES

- Use appropriate hoses and/or hose connections.
- Check periodically for leaks and the quality of the hose and hose connections and take suitable measures (replace) as required.
- Isolate and protect temperature control hoses against contact/mechanical load.



CAUTION

Hot or cold thermal fluid and surfaces

BURNS TO LIMBS

- Avoid direct contact with the thermal fluids or the surfaces.
- Wear your personnel protective equipment (e.g. temperature-resistant safety gloves, safety goggles, safety footwear).

To connect applications, use only temperature control hoses that are compatible with the thermal fluid used. When selecting temperature control hoses, also pay attention to the temperature range in which the hoses are to be used.

- We recommend you use only temperature-insulated temperature control hoses with your accessory. The user is responsible for the insulation of connection valves.

2.6 Wrench sizes and torques

Observe the proper wrench sizes for the pump connection at the accessory. The following table lists the pump connections and the resulting wrench sizes, as well as the torque values. Always perform a leak test afterwards and re-tighten the connections if required. The values of the maximum torque (see table) must **not** be exceeded.

Overview wrench sizes and torques

Pump connection	Sleeve nut wrench size	Connector wrench size	Recommended torques in Nm	Maximum torques in Nm
M16x1	19 AF	17 AF	20	24
M24x1.5	27 AF	27 AF	47	56
M30x1.5	36 AF	32 AF	79	93
	36 AF	36 AF	79	93
M38x1.5	46 AF	46 AF	130	153

2.7 Preparations for operation

2.7.1 Checking the knurled screws

PROCEDURE

- Check whether the knurled screw on the **>Drain<** [8] has been mounted and tightened.

2.7.2 Connecting the accessory to the temperature control unit

INFORMATION

The accessory must be connected to your temperature control unit as an **externally closed** application. Follow the operation manual of the temperature control unit when connecting the device. Avoid bending the temperature control hoses. Use suitable angle pieces and lay the hose connections with a large radius. Take the minimum bending radius from the data sheet of the temperature control hoses used.

PROCEDURE

- Remove the protective plastic caps on your accessory from the connections **>Circulation flow<** [1] and **>Circulation return<** [2].
- Remove the protective plastic caps on your temperature control unit from the connections **>Circulation flow<** [1] and **>Circulation return<** [2].
- Use a temperature control hose to connect the **>Circulation flow<** [1] on the temperature control unit with the **>Circulation return<** [2] on the accessory.
- Use a temperature control hose to connect the **>Circulation flow<** [1] on the accessory with the input of your external application.
- Use a temperature control hose to connect the output of your external application with the **>Circulation return<** [2] on the temperature control unit.

2.7.3 Connecting the control cable

NOTE

Establishing a connection with the interfaces on the accessory during operation

DAMAGE TO THE INTERFACES

- When devices in operation are connected with interfaces of the accessory, interfaces may get damaged.
- Before connecting, ensure the accessory and the device to be connected are turned off.

PROCEDURE

- Connect the connection **>External control signal<** [48]/**>Floating contact<** [51] on the accessory to the connection **>POKO (floating contact) Alarm<** on the temperature control unit. The cable required is included.

2.8 Connecting to the power supply

INFORMATION

Based on local circumstances, it may be that you need to use an alternative power cable instead of the supplied original power cable. Do not use a power cable that is longer than **3 m** to be able to disconnect the accessory from the mains at any time. Have the mains cable only installed by a qualified electrician.

2.8.1 Connection using socket with protective earth (PE)

DANGER**Connecting to a power socket without protective earth (PE)****MORTAL DANGER FROM ELECTRIC SHOCK**

- Always connect the accessory to safety sockets (PE).

DANGER**Damaged power cable/power cable connection****MORTAL DANGER FROM ELECTRIC SHOCK**

- Do not start up the accessory.
- Isolate the accessory from the power supply.
- Have the power supply cable/power supply connection replaced and inspected by an electrician.
- Do not use a power cable that is longer than **3 m**.

NOTE**Incorrect power supply connection****DAMAGE TO THE ACCESSORY**

- Your building's existing power supply voltage and frequency must match the data provided on the rating plate of the accessory.

INFORMATION

In case of uncertainties about an existing protective earth (PE), have the connection inspected by an electrician.

3 Function description

3.1 Function description of the accessory

3.1.1 General functions

The **pressure booster pump** can only be used in combination with a **temperature control unit**. It compensates pressure losses in external systems.

The **pressure booster pump** is connected in series to the pump in the temperature control unit. It is controlled through the interface "POKO (floating contact) Alarm" on Com.G@te.

3.2 To be noted when planning the test

INFORMATION

Also observe page 11, section »Extension of specified normal operation«.

The focus is on your application. Bear in mind that system performance is influenced by heat transfer, temperature, thermal fluid viscosity, volume flow and the flow speed.

- Make sure that the electrical connection is adequately dimensioned.
- The place of installation of the accessory should be selected so as to ensure adequate fresh air.
- A cross-section reduction or shut-off in the thermofluid circulation must be avoided.
- Avoid bending the temperature control and cooling water hoses (if required). Use suitable angle pieces and lay the hose connections with a large radius. Take the minimum bending radius from the data sheet of the temperature control hoses used.
- The selected hose connections must be resistant to the thermofluid, the working temperatures and the permitted maximum pressure.
- Check the hoses at regular intervals for any material fatigue (e.g. cracks, leaks).

4 Setup mode

4.1 Setup mode

CAUTION

Extremely hot / cold surfaces, connections and thermal fluids

BURNS/FREEZING OF LIMBS

- Surfaces, connections and tempered thermal fluids can be extremely hot or cold depending on the operating mode.
- Avoid direct contact with surfaces, connections and thermal fluids!
- Wear your personnel protective equipment (e.g. temperature-resistant safety gloves, safety goggles).

NOTE

When the accessory is switched off, the thermofluid temperature is higher/lower than the room temperature

DAMAGE TO THE ACCESSORY

- Use the temperature control unit to temper the thermofluid in the accessory to room temperature (20 °C).
- Do not close the shut-off valves in the thermofluid circuit.

4.1.1 Turning on the accessory

NOTE

The accessory is turned on before filling

DAMAGE TO THE ACCESSORY

- Dry running can damage the pump if the temperature control unit and the accessory are not filled.
- Turn on the accessory only **after** filling it.

INFORMATION

The accessory can be turned on only if

- the temperature control unit is filled and turned on
- the connection **>External control signal<** [48] / **>Floating contact<** [51] on the accessory is connected to the temperature control unit.

PROCEDURE

- Switch the temperature control unit on.
The temperature control unit must be filled and vented.
- Switch on the accessory using the **>Mains switch<** [37].

4.2 Filling and draining the accessory

CAUTION

Non-compliance with the safety data sheet for the thermal fluid to be used

INJURIES

- Risk of injury to the eyes, skin, respiratory tract.
- The safety data sheet for the thermal fluid to be used must be read prior to use and its contents respected.
- Observe the local regulations/work instructions.
- Wear your personnel protective equipment (e.g. temperature-resistant safety gloves, safety goggles, safety footwear).
- Danger of slipping because floor and work area are contaminated. Clean the work station and follow the instructions for the disposal of thermal fluid and material on page 12 in section **»Proper disposal of resources and consumables«**.

The illustration “connection diagram” can be found on page 28 in section **»Annex«**.

4.2.1 Filling the accessory

NOTE

The accessory is turned on before filling

DAMAGE TO THE ACCESSORY

- Dry running can damage the pump if the temperature control unit and the accessory are not filled.
- Turn on the accessory only **after** filling it.

PROCEDURE

- Check whether the steps described on page 16 in section »Preparations for operation« were implemented.
- For filling, venting and degassing of the temperature control unit, proceed as described in the operation manual of the temperature control unit.

4.2.2 Draining the accessory

CAUTION

Hot or very cold thermal fluids

SERIOUS BURNS/FREEZING OF LIMBS

- Before draining, ensure that the thermal fluid has room temperature (20 °C).
- If, at this temperature, the thermal fluid is too viscous to be drained: Control the temperature of the thermal fluid for a few minutes until the viscosity will allow drainage. Never control the temperature of the thermal fluid when the **>Drain<** [8] (if present) is open.
- **Close the >Drain<** [8] (if present) with knurled screw.
- Danger of burns when draining thermal fluids at temperatures above 20 °C.
- Wear your personal protective equipment when carrying out the drainage operation.
- Only drain with a suitable draining hose and container (these must be resistant to the thermal fluid and temperature).

PROCEDURE

- Proceed as described in the operation manual of the temperature control unit when draining it. The accessory is emptied via the temperature control unit. Follow the instructions for the disposal of thermal fluid on page 12 in Section »Proper disposal of resources and consumables«.
- Wait until the temperature control unit, the application and the accessory have emptied.
- From the accessory, remove the temperature control hose at the **>Circulation flow<** [1].
- From the accessory, remove the temperature control hose at the **>Circulation return<** [2].
- Leave the accessory open for a while to allow it to dry out and the residue to drain.
- On the accessory, connect the temperature control hose with the **>Circulation flow<** [1].
- On the accessory, connect the temperature control hose with the **>Circulation return<** [2].
- The accessory is now drained.

5 Normal operation

5.1 Automatic operation

CAUTION

Extremely hot / cold surfaces, connections and thermal fluids

BURNS/FREEZING OF LIMBS

- Surfaces, connections and tempered thermal fluids can be extremely hot or cold depending on the operating mode.
- Avoid direct contact with surfaces, connections and thermal fluids!
- Wear your personnel protective equipment (e.g. temperature-resistant safety gloves, safety goggles).

5.1.1 Temperature control

5.1.1.1 Starting the temperature control process

The temperature control process can be started only after the connected temperature control unit has been started. Prerequisite: Temperature control unit and accessory are filled and bled and both are interconnected via the connection **>External control signal<** [48] / **>Floating contact<** [51] on the accessory.

PROCEDURE

- ➤ Switch on the accessory using the **>Mains switch<** [37].

5.1.1.2 Ending the temperature control process

NOTE

When the accessory is switched off, the thermofluid temperature is higher/lower than the room temperature

DAMAGE TO THE ACCESSORY

- Use the temperature control unit to temper the thermofluid in the accessory to room temperature (20 °C).
- Do not close the shut-off valves in the thermofluid circuit.

The temperature control process can be ended at any time. The temperature control process in the connected temperature control unit continues to run after turning off the accessory. The temperature control process in the connected temperature control unit must be stopped separately.

PROCEDURE

- ➤ Switch off the accessory using the **>Mains switch<** [37].

6 Service/maintenance

6.1 Maintenance



Cleaning/maintenance while the accessory is operating

MORTAL DANGER FROM ELECTRIC SHOCK

- Stop an ongoing temperature control process.
- Disconnect the accessory from the power supply by turning the >Mains switch< [37] on the accessory to "0".
- Also disconnect the accessory from the current supply.



Carrying out maintenance work not described in this installation guide

DAMAGE TO THE ACCESSORY

- For maintenance work not described in the installation guide, contact Huber company.
- Maintenance work not described in this installation guide is reserved for qualified specialists trained by Huber.
- Only perform the following maintenance work on the accessory yourself.

6.1.1 Function check and visual inspection

Monitoring interval

Cooling*	Description	Maintenance interval	Comment	Person responsible
L/W	Visually inspect hoses and hose connections	Prior to switching on the accessory	Exchange leaking hoses and hose connections prior to switching on the accessory. On page 22 see Section »Replacing temperature control hoses«.	Responsible body and/or operators
L/W	Inspect power supply cable	Prior to switching on the accessory or on relocation	Do not start-up the accessory if the power cable is damaged.	Qualified electrician (BGV A3)
L	Clean air inlet grille	As required	Clean the perforated sheet of the accessory with a damp cloth	Responsible body
L/W	Thermal fluid inspection	As required		Responsible body and/or operators
L/W	Check mechanical seals (drip tray)	Monthly	On page 23 see Section »Inspect the mechanical seal«	Responsible body and/or operators
L/W	Inspect the accessory for damage and stability	Every 12 months or after a change of location		Responsible body and/or operators

*L = Air cooling; W = Water cooling

6.1.2 Replacing temperature control hoses

Replace defective temperature control hoses **before** turning on the system.

PROCEDURE

- Drain the temperature control unit and the accessory as described in the respective operation manual.
- Replace defective temperature control hoses. When disposing of them, observe on page 12 Section »Proper disposal of resources and consumables«.
- Reconnect your external application as described in the respective operation manual.
- Fill the temperature control unit with thermal fluid as described in the respective operation manual.

- Vent the temperature control unit as described in the respective operation manual. An externally open application does not need to be vented.
- Start the function "Degassing" as described in the respective operation manual. An externally open application does not need to be de-gassed.
- Restart the temperature control unit and the accessory in normal mode.

6.2 Thermal fluid inspection, replacement and circuit cleaning

PROCEDURE

- Do not disconnect the accessory.
- Proceed as described in the operation manual of the temperature control unit when performing the thermofluid inspection and changing and cleaning the thermofluid circuit.

6.3 Cleaning the surfaces

CAUTION

Extremely hot / cold surfaces, connections and thermal fluids

BURNS/FREEZING OF LIMBS

- Surfaces, connections and tempered thermal fluids can be extremely hot or cold depending on the operating mode.
- Avoid direct contact with surfaces, connections and thermal fluids!
- Wear your personnel protective equipment (e.g. temperature-resistant safety gloves, safety goggles).

NOTE

Exposed plug contacts

DAMAGE CAUSED BY FLUID INGRESS

- Protect unused plug contacts with the protective caps supplied.
- Clean surfaces only with a damp cloth.

A standard stainless steel cleaning agent is suitable for cleaning the stainless steel surfaces. Carefully clean painted surfaces (damp only) using a solution of sensitive-fabrics detergent. Follow the instructions on page 12, section »Proper disposal of resources and consumables« for the disposal of cleaning agents and material.

6.4 Inspect the mechanical seal

NOTE

No visual inspection of the mechanical seals

MATERIAL DAMAGE IN THE ACCESSORY CAUSED BY LEAKING MECHANICAL SEALS

- Check the mechanical seals once a month.
- In case of leakage, stop the accessory and contact Customer Support. The telephone number can be found on page 27 in Section »Phone number and company address«.

Expect the formation of drops at the mechanical seal when operating with thermal fluids that evaporate only very slowly, as mechanical seals are never absolutely tight. These drops must be removed if necessary (see page 22 Section »Function check and visual inspection«). The tightness of the mechanical seal must be visually checked. In case of a leakage, more thermal fluid exits at the bottom of the accessory. Follow the instructions for the disposal of thermal fluid on page 12 in Section »Proper disposal of resources and consumables«.

6.5 Plug contacts

NOTE**Exposed plug contacts****DAMAGE CAUSED BY FLUID INGRESS**

- Protect unused plug contacts with the protective caps supplied.
- Clean surfaces only with a damp cloth.

Protective caps are supplied for all plug contacts. Make sure that any plug contacts not required are protective with the caps.

6.6 Decontamination/repairs

CAUTION**Returning an accessory for repair that was not decontaminated****PHYSICAL INJURY AND PROPERTY DAMAGE CAUSED BY HAZARDOUS MATERIALS IN OR ON THE ACCESSORY**

- Carry out appropriate decontamination.
- The decontamination process depends on the type and quantity of the materials used.
- Consult the relevant safety data sheet.
- You will find a prepared return receipt at www.huber-online.com.

As the responsible body you are responsible for carrying out decontamination **BEFORE** third-party personnel come into contact with the accessory. Decontamination must be carried out **BEFORE** the accessory is returned for repair or inspection (clearly stating in writing on the accessory that the decontamination has been carried out).

To simplify the process, we have prepared a form for you. This is available for download at www.huber-online.com.

7 Shutting down

7.1 Safety instructions and basic principles



DANGER

Connection/adjustment to the power supply not carried out by an electrician and/or connection to a power socket without protective earth (PE)

MORTAL DANGER FROM ELECTRIC SHOCK

- Have the connection/adjustment to the power supply carried out by an electrician.
- Always connect the accessory to safety sockets (PE).



DANGER

Damaged power cable/power cable connection

MORTAL DANGER FROM ELECTRIC SHOCK

- Do not start up the accessory.
- Isolate the accessory from the power supply.
- Have the power supply cable/power supply connection replaced and inspected by an electrician.
- Do not use a power cable that is longer than **3 m**.



WARNING

Risk of tipping due to unstable accessory

SERIOUS INJURY AND PROPERTY DAMAGE

- Avoid risk of tipping due to unstable accessory.



CAUTION

Non-compliance with the safety data sheet for the thermal fluid to be used

INJURIES

- Risk of injury to the eyes, skin, respiratory tract.
- The safety data sheet for the thermal fluid to be used must be read prior to use and its contents respected.
- Observe the local regulations/work instructions.
- Wear your personal protective equipment (e.g. temperature-resistant safety gloves, safety goggles, safety footwear).
- Danger of slipping because floor and work area are contaminated. Clean the work station and follow the instructions for the disposal of thermal fluid and material on page 12 in section »**Proper disposal of resources and consumables**«.



CAUTION

Hot or very cold thermal fluids

SERIOUS BURNS/FREEZING OF LIMBS

- Before draining, ensure that the thermal fluid has room temperature (20 °C).
- If, at this temperature, the thermal fluid is too viscous to be drained: Control the temperature of the thermal fluid for a few minutes until the viscosity will allow drainage. Never control the temperature of the thermal fluid when the **>Drain< [8]** (if present) is open.
- **Close the >Drain< [8]** (if present) with knurled screw.
- Danger of burns when draining thermal fluids at temperatures above 20 °C.
- Wear your personal protective equipment when carrying out the drainage operation.
- Only drain with a suitable draining hose and container (these must be resistant to the thermal fluid and temperature).

INFORMATION

All safety instructions are important and must be followed during working operations according to the installation guide!

7.2 Switch-off

PROCEDURE

- **>Mains switch< [37]** set to "0".
- Disconnect the accessory from the power supply.

7.3 Draining the accessory

PROCEDURE

- Drain the accessory as described on page 20 in section »Draining the accessory«.

7.4 Disconnecting the control cable

PROCEDURE

- Disconnect the connection >External control signal< [48]/>Floating contact< [51] on the accessory from the connection >POKO (floating contact) Alarm< on the temperature control unit.

7.5 Separating the accessory from the temperature control unit

PROCEDURE

- Drain the temperature control unit **before** you disconnect the accessory. For more information, please refer to the operation manual of the temperature control unit.
- Remove the temperature control hose from the >Circulation return< [2] on the temperature control unit and from the output of you external application.
- Remove the temperature control hose from the input of your external application and from the >Circulation flow< [1] of the accessory.
- Remove the temperature control hose from the >Circulation return< [2] on the accessory and from the >Circulation flow< [1] on the temperature control unit.
- Mount the protective plastic caps onto the accessory connections >Circulation flow< [1] and >Circulation return< [2].
- Mount the protective plastic caps onto the temperature control unit connections >Circulation flow< [1] and >Circulation return< [2].

7.6 Packing

Use the original packaging wherever possible! Further information can be found on page 13 in section »Unpacking«.

7.7 Shipping

NOTE

Accessories are transported in a horizontal position

PROPERTY DAMAGE

- Only transport accessories in an upright position.

NOTE

Improper transport of accessory

PROPERTY DAMAGE

- Comply with all requirements in this section to avoid damage to the accessory.

If fitted, use the lugs located on the top of the accessory for transportation. Do not transport the accessory alone and without aids.

- Always use the original packaging for transport.
- Protect attachments from damage during transport!
- Secure with tensioning belts/lashing straps rated for the weight concerned.
- Additionally secure (depending on model) with plastic film, cardboard and straps.

7.8 Disposal

Huber temperature control units and Huber accessories are made of high quality, recyclable materials. For example: Stainless steel 1.4301 / 1.4401 (V2A), copper, nickel, FKM, Perbunan, NBR, ceramic, carbon, Al-Oxid, red brass, brass, nickel-plated brass and silver solder. Proper recycling of the temperature control unit and accessories can actively help reduce CO₂ emissions in the production of these materials. Follow the laws and regulations of your jurisdiction when disposing material.

7.9 Phone number and company address

INFORMATION

Contact Customer Support **prior** to returning your accessory. Please keep the serial number of the calibration bath ready. The serial number can be found on the nameplate of the calibration bath.

7.9.1 Telephone number: Customer Support

Telephone: +49-781-9603-244

7.9.2 Telephone number: Sales

Telephone: +49-781-9603-123

7.9.3 Email address: Customer Support

Email: support@huber-online.com

7.9.4 Service/return address

Peter Huber Kältemaschinenbau SE
Werner-von-Siemens-Straße 1
77656 Offenburg

7.10 Certificate of Compliance

Please read page 24, section »Decontamination/repairs«.

8 Annex

Inspired by **temperature** designed for you

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